

THE CLAIMS:

1. (Previously Presented) A method for mimicking network devices, the method being performed in a computing device having first and second network interface cards, the first network interface card connecting the computing device to an external network and the second network interface card connecting the computing device to a local network, the method comprising the steps of:

receiving an incoming message from a client network device residing on the external network, the incoming message being addressed to a network address of a target network device residing on the local network;

determining if an application module residing in the computing device is configured to process a functionality requested by the incoming message;

redirecting the incoming message to the application module in the case that the application module is configured to process the functionality; and

passing the incoming message through the local network to the target network device residing on the local network in the case that the application module is not configured to process the functionality.

2. (Previously Presented) A method according to claim 1, wherein in the redirecting step, the processing of the functionality by the application module includes sending a response message from the application module over the external network to the client network device, the response message having a source identification address identical to a source identification address of the target network device.

3. (Previously Presented) A method according to claim 1, wherein in the redirecting step, the processing of the functionality by the application module includes sending a local message from the application module over the local network to the target network device which performs a function in response to the local message.

4. (Previously Presented) A method according to claim 1, wherein in the determining step, an inbound rules table is used to determine if the functionality is to be processed by an application module residing in the computing device.

5. (Previously Presented) A method according to claim 4, wherein the inbound rules table contains a plurality of rules, each rule corresponding to one of a plurality of target network devices on the local network.

6. (Previously Presented) A method according to claim 5, further comprising the step of discovering each of the plurality of target network devices on the local network by listening to the local network for messages from the target network devices, creating a target descriptor entry corresponding to each discovered target network device in a target descriptor table, and creating a rule corresponding to each target descriptor entry in the inbound rules table.

7. (Previously Presented) A method according to claim 6, wherein the inbound rules table contains at least one rule which indicates whether a functionality

requested for a corresponding target network device to perform is to be processed by an application module residing in the computing device.

8. (Previously Presented) A method according to claim 7, wherein in the determining step, the incoming message is applied to the plurality of rules in the inbound rules table to determine if the functionality is to be processed by an application module residing in the computing device.

9. (Previously Presented) A method according to claim 7, wherein each rule contains an IP address of the target network device corresponding to the rule to indicate whether a functionality requested for the corresponding target network device to perform is to be processed by an application module residing in the computing device.

10. (Previously Presented) A method according to claim 7, wherein each rule contains a port identifier to indicate whether a functionality requested of the target network device corresponding to the rule is to be processed by an application module residing in the computing device.

11. (Previously Presented) A method according to claim 6, wherein the discovering step includes sending a discovery message to each discovered target network device and receiving discovery information in response to the discovery message from the corresponding target network device, wherein the discovery information is placed in the target descriptor entry for the corresponding target network device.

12. (Previously Presented) A method according to claim 11, further comprising a polling step of sending a discovery message on a periodic basis to each discovered target network device, and receiving in response to the discovery message discovery information from the corresponding target network device, wherein the target descriptor entry is updated with the newly received discovery information.

13. (Previously Presented) A method according to claim 12, wherein in the case that discovery information is not received in response to the discovery message for a particular one of the discovered target network devices, the target descriptor entry corresponding to the particular discovered target network device is deleted.

14. (Previously Presented) A method according to claim 6, further comprising the step of sending a notification to the application module for each discovered target network device, the notification containing information related to the target descriptor entry for the corresponding target network device.

15. (Original) A method according to claim 6, further comprising the step of publishing each target descriptor entry to the application module.

16. (Original) A method according to claim 3, wherein the second network interface card is assigned a preset IP address, and the local message contains a source IP address which is identical to the preset IP address.

17. (Original) A method according to claim 3, wherein the local message contains a source IP address which is identical to a source IP address of the client network device.

18. (Original) A method according to claim 3, wherein the local message contains a source IP address which is identical to a source IP address of the second network interface card.

19. (Previously Presented) A method according to claim 1, wherein in the redirecting step, the processing of the functionality by the application module includes preparation of an outbound message for delivery to a designated device on one of the external network and the local network, and a routing table is used to determine which one of the external network and the local network is used for sending the outbound message to the designated device.

20. (Previously Presented) A method according to claim 19, wherein the routing table contains a cross-reference indicator for each target network device to indicate which one of the external network and the local network is used for sending the outbound message to the designated device.

21. (Original) A method according to claim 19, wherein the routing table is used to determine whether a preset IP address of the second network interface card or a

source IP address of the client network device is used as a source IP address in the outbound message.

22. (Original) A method according to claim 7, further comprising the step of tracking a port identifier of a port opened by the application module and creating a rule in the inbound rules table corresponding to the port identifier, wherein in the determining step, the rule is used to redirect a message from the external network to the application module if the message contains the port identifier corresponding to the rule.

23. (Previously Presented) A method according to claim 22, further comprising the steps of tracking an initial target port identifier of a port opened by a target network device, mapping the initial target port identifier to a new target port identifier, creating a first map rule in the inbound rules table corresponding to the target network device which maps the initial target port identifier to the new target port identifier, and creating a second map rule in an outbound rules table corresponding to the target network device which maps the new target port identifier to the initial target port identifier.

24. (Previously Presented) A method according to claim 4, wherein the local network is a USB network, the target network device is a printer, and the inbound rules table contains rules which are used in the determining step to redirect an incoming message for the printer from the external network to the application module which sends a USB message over the local network to the printer in response to the incoming message.

25. (Previously Presented) A method according to claim 4, wherein the local network is a USB network, the target network device is a digital camera, and further including the steps of downloading a digital image to the application module from the digital camera via the local network, and sending the digital image to a server on the external network.

26. (Previously Presented) A method according to claim 4, wherein the inbound rules table contains rules which are used in the determining step to route an incoming message from the external network to a network device on the local network.

27. (Original) A method according to claim 4, wherein the inbound rules table contains rules which are used in the determining step to capture an incoming message from the external network and further including the step of preventing transmission of the incoming message on the local network.

28. (Previously Presented) A method according to claim 4, wherein the inbound rules table contains rules which are used in the determining step to determine that all incoming messages from the external network are not to be processed by the application module, whereby all incoming messages from the external network are passed through the local network.

29. (Previously Presented) A method according to claim 4, wherein the application module is a file server which sends at least one file over the local network to

the target network device and at least one file over the external network to the client network device.

30. (Original) A method according to claim 4, wherein the inbound rules table contains rules which are used in the determining step to determine that a set of designated incoming messages are copied to the application module which records each of the set of designated incoming messages.

31. (Previously Presented) A method according to claim 4, wherein the inbound rules table contains rules which are used in the determining step to detect if the incoming message is an undesirable message, and in the case that the incoming message is an undesirable message, determining that the incoming message is to be processed by the application module, whereby the incoming message is redirected to the application module.

32. (Original) A method according to claim 1, further including the step of transmitting a plurality of undesirable messages from the application module over one of the external network and the local network.

33. (Previously Presented) A method for mimicking network devices, the method being performed in a computing device having first and second network interface cards, the first network interface card connecting the computing device to an external network and the second network interface card connecting the computing device to a local network, the method comprising the steps of:



discovering a plurality of target network devices on the local network by detecting messages on the local network from each of the plurality of target network devices;

creating a rule in a rules table for each of the discovered target network devices, each rule containing the IP address of the corresponding target network device and indicating whether an application module in the computing device is configured to perform a function on behalf of the corresponding target network device;

receiving an incoming message from a client network device residing on the external network, the incoming message being addressed to an IP address of a designated one of the plurality of target network devices;

determining, based at least in part on the rule corresponding to the designated target network device, if the incoming message requests a functionality that the application module is configured to perform;

redirecting, in the case that the incoming message requests a functionality that the application module is configured to perform, the incoming message to the application module which performs the requested functionality in response to the incoming message; and

passing, in the case that the incoming message does not request a functionality that the application module is configured to perform, the incoming message through the local network to the designated target network device.

34. (Previously Presented) A computing device for mimicking network devices, the computing device having first and second network interface cards, the first

network interface card connecting the computing device to an external network and the second network interface card connecting the computing device to a local network, said computing device comprising:

a program memory for storing process steps executable to perform a method according to any of claims 1 to 33 and 37 to 40, and

a processor for executing the process steps stored in said program memory.

35. (Previously Presented) Computer-executable process steps stored on a computer readable medium, said computer-executable process steps for mimicking network devices and for being performed in a computing device having first and second network interface cards, the first network interface card connecting the computing device to an external network and the second network interface card connecting the computing device to a local network, said computer-executable process steps comprising process steps executable to perform a method according to any of claims 1 to 33 and 37 to 40.

36. (Previously Presented) A computer-readable medium which stores computer-executable process steps, the computer-executable process steps to mimic network devices and to be performed in a computing device having first and second network interface cards, the first network interface card connecting the computing device to an external network and the second network interface card connecting the computing device to a local network, said computer-executable process steps comprising process steps executable to perform a method according to any of claims 1 to 33 and 37 to 40.

37. (Previously Presented) A method according to claim 1, wherein the target network device is a legacy network device.

38. (Previously Presented) A method according to claim 33, wherein the target network device is a legacy network device.

39. (Previously Presented) A method according to claim 3, wherein in the passing step, the target network device performs the requested functionality in response to the incoming message received from the computing device.

40. (Previously Presented) A method according to claim 33, wherein in the passing step, the target network device performs the requested functionality in response to the incoming message received from the computing device.